

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of

Request by the State of Oregon for Waiver of the  
Commission's Rules to Deploy a 700 MHz Public  
Safety Interoperable Broadband Network

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PS Docket No. 06-229

**REQUEST FOR WAIVER**

Pursuant to Section 1.925(b) of the Commission's rules,<sup>1</sup> the State of Oregon ("the State"), by and through its Department of Transportation, Department of State Police, Department of Forestry, and Department of Corrections and respectfully requests that the Federal Communications Commission ("FCC" or "Commission") waive Sections 90.18, 90.528, 90.1401, *et seq.* (Subpart AA),<sup>2</sup> and such other of the Commission's rules as may be necessary to enable the State's early deployment of a 700 MHz interoperable public safety broadband network on a paired assignment of 5 MHz wide channels in the public safety broadband block between 793-798 MHz for mobile transmission and 763-768 MHz as part of the Oregon Wireless Interoperability Network ("OWIN"). The requested waiver will serve the public interest by improving communications for first responders in Oregon today without sacrificing any of the policy goals the Commission is seeking to achieve through its rules and the recently released National Broadband Plan.

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<sup>1</sup> 47 C.F.R. §1.925.

<sup>2</sup> 47 C.F.R. §§90.18, 90.528, and 90.1401, *et seq.*

Like the Commission, the State of Oregon has identified public safety interoperable broadband services as a high priority. The State has provided and is prepared to continue to provide statewide policy direction as well as make the initial capital investment necessary to deploy a public safety broadband wireless network as quickly as possible, provided such a system can be implemented in the 700 MHz public safety broadband spectrum.

In 2001, Oregon's Governor established the Statewide Interoperability Executive Council ("SIEC") to guide the State in the creation of a statewide interoperable public safety network. In 2005, the Oregon Legislature (Legislature) codified the SIEC and placed it within the Department of State Police. Also in 2005, the Legislature directed the four major agencies (Transportation, State Police, Forestry and Corrections) operating radio systems to consolidate their systems, resources and efforts to create OWIN. Construction has begun on the first phase of a new statewide 700 MHz public safety, digital, land mobile radio ("LMR") system in the narrowband portion of the 700 MHz spectrum. A major portion of the OWIN Project calls for the design, installation and implementation of a multi-layer system including: (a) a Project 25 (P25) standards based integrated voice and low speed data trunked LMR system, (b) a statewide interoperability system, and (c) *a separate moderate speed mobile data system* (collectively, "OWIN Radio System"). If the Commission grants this waiver, Oregon will be able to save precious time and scarce resources by installing and implementing a public safety statewide *broadband* wireless data system as part of the OWIN Project instead of first installing a slower speed data system and then finding itself needing to upgrade or completely replace this system with a broadband data system in the very near future as today's wireless data applications accelerate.

As demonstrated below, an Oregon stand-alone wireless broadband network will meet the technical specifications the Commission proposed in the *Third Further Notice*<sup>3</sup> and set forth in the September 4, 2009 National Public Safety Telecommunications Council ("NPSTC") 700 MHz Broadband Task Force Report and Recommendations ("NPSTC Recommendations").<sup>4</sup> This Oregon network will be capable of integration into a future interoperable public safety broadband network pursuant to guidelines and standards adopted by the Commission's proposed Emergency Response Interoperability Center ("ERIC")<sup>5</sup> or other relevant bodies. Granting the waiver will enable rapid public safety wireless broadband deployment of a statewide system, while the nationwide network contemplated in the above-captioned proceeding remains years from deployment unless such developmental demonstration projects are approved. Further, the State of Oregon offers a unique opportunity due to the presence of a) current State Legislative funding authorization, b) the construction cycle of a new statewide system and c) Oregon's population demographics which vary from an urban area security initiative (UASI) city to a vastly rural component with mountainous topography. Oregon offers a unique opportunity to solve deployment challenges that will be faced across the nation.

The State of Oregon asks the Commission to act quickly and favorably on this request for waiver.

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<sup>3</sup> See *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, WT Docket No. 06-150 and PS Docket No. 06-229, *Third Further Notice of Proposed Rulemaking*, FCC 08-230 (rel. Sept. 25, 2008) ("*Third Further Notice*").

<sup>4</sup> See NPSTC 700 MHz Broadband Task Force Report and Recommendations, (Sept. 4, 2009) ("NPSTC Recommendations").

<sup>5</sup> Establishment of an Emergency Response Interoperability Center, *Order*, FCC 10-67, Gen. Docket 09-51, PS Docket 06-229 (released Apr. 23, 2010).

## **I. INTRODUCTION**

Over the last few years, the Commission has taken significant steps to advance nationwide interoperable public safety broadband communications. However, as other waiver applicants have described, the Commission's efforts to promote deployment of public safety broadband communications in the 700 MHz band have been stalled by changes in policy direction and the failure of the "D Block" auction. The recent National Broadband Plan sets forth a revised plan for a national public safety broadband network, but it will require multiple rulemaking proceedings that are not likely to be concluded until well into 2011. Actual deployment could be many years beyond that. Thus, absent waivers to allow early deployment, the State will be prevented from moving forward to address its critical broadband requirements, even though it is otherwise prepared to proceed. The State already has a plan in place to deploy a statewide 700 MHz network for narrowband voice and "moderate speed" data. The resources and infrastructure now designated for the data portion of the network can be shifted to an interoperable Long Term Evolution ("LTE"), broadband network that could later be integrated into a nationwide public safety broadband solution.

Today, public safety agencies and the nation's major public safety associations unanimously agree that the technology of choice should be LTE, an open standard technology. The major global commercial mobile service providers have adopted LTE for deployment in the United States within the next year. In addition, APCO International, the National Emergency Number Association, the Public Safety Spectrum Trust ("PSST"), and the National Public Safety Telecommunications Council ("NPSTC") have all publicly endorsed LTE for use in the public safety 700 MHz broadband spectrum allocation. Likewise, virtually every other party requesting

waivers to deploy public safety broadband systems on a local or regional basis in the 700 MHz public safety broadband spectrum have declared that LTE is their technology of choice.<sup>6</sup>

In the *Second Report & Order*, the Commission recognized the need to balance two important goals as it crafted the 700 MHz public safety broadband policy: (1) foster a public-private solution to develop nationwide interoperable public safety broadband communications; and (2) enable public safety entities with available resources to deploy public safety broadband systems on an accelerated basis in some circumstances.<sup>7</sup> As to the second goal, the Commission said that: (1) public safety entities were permitted to undertake an earlier build-out than would be provided for in a Network Sharing Agreement (“NSA”), with the public safety entities entitled to compensation up to the amount the D Block licensee would have incurred if it had constructed the network itself; and (2) public safety entities could build their own broadband networks in areas not included in the NSA.<sup>8</sup> Thus, the current early deployment options in the rules are premised on there being a D Block licensee and a NSA. With no D Block licensee and no NSA, and in any event with national network deployment years away, there is no clear path for early deployment for public safety entities in need of critical public safety broadband solutions today.

## **II. THE STATE OF OREGON NEEDS BETTER PUBLIC SAFETY BROADBAND COMMUNICATIONS AND IS PREPARED TO DEVOTE RESOURCES TO DEPLOY AN INTEROPERABLE NETWORK IN THE 700 MHZ BAND.**

In Oregon, there is a dire need for the broadband services that a newly-deployed 700 MHz public safety broadband system would supply. Today, Oregon’s state public safety

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<sup>6</sup> *Public Safety and Homeland Security Bureau Seeks Comment on Petitions for Waiver to Deploy 700 MHz Public Safety Broadband Networks*, Public Notice, PS Docket No. 06-229, DA 09-1819, ¶ 1 (rel. Aug. 14, 2009) (“Public Notice”).

<sup>7</sup> *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Report and Order, 22 FCC Rcd 15289 (2007) (“*Second Report & Order*”).

<sup>8</sup> *Id.* at ¶¶ 471-84.

community is (a) operating without public safety mobile data services, and (b) is attempting to acquire moderate speed mobile data systems that are licensable on 700 MHz voice channels.

These moderate speed systems are at best marginally able to carry modern public safety information technology applications and would not be interoperable with a national public safety broadband network, such as that envisioned in the National Broadband Plan. The State of Oregon strongly prefers to deploy an interoperable public safety broadband network in the 700 MHz band in the near-term instead of continuing with plans to incorporate the separate moderate speed mobile data system that is currently part of the OWIN Project.<sup>9</sup> The moderate speed mobile data system is part of an Oregon request for proposal that was issued on December 3, 2009, is in the industry proposal generation stage, and proposals are due in August 2010.

Deployment of a public safety wireless broadband network in Oregon will enhance day-to-day mobile operations through support of a full spectrum of interoperable IP multi-media applications, including:

- Streaming video (surveillance, remote monitoring)
- Digital Imaging
- Automatic Vehicle Location
- Computer Aided Dispatching
- Email
- Mapping/GIS
- Remote Database Access
- Report Management System Access
- Text Messaging
- Telemetry/Remote Diagnostics
- Web Access

Because of the current lack of statewide wireless data connectivity in Oregon, first responders and other public safety personnel must return to fixed offices to access critical data or

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<sup>9</sup> While there are commercial broadband networks in some urban areas of Oregon, those networks do not provide sufficient reliability, coverage, functionality, or priority access to accommodate mission critical public safety communications. The recurring monthly charges for those services are also prohibitive for most public safety agencies.

to solicit the data through voice interface with records personnel who then query databases and relay the needed information to field personnel. Such a process is inefficient, time consuming/wasting, and labor intensive. In contrast, a broadband mobile data network could make the information and applications listed above readily available to responders in the field.

A public safety mobile data network in the State of Oregon will support tasks (*e.g.*, database lookups and dispatch messaging) that currently require the consumption of substantial time to communicate between dispatchers and field personnel on narrowband voice systems. An Oregon public safety broadband network will allow off-loading of this data traffic to broadband channels and in the process significantly reduce the narrowband voice channel load. Mobile data systems would allow police officers, for example, to have remote access to databases (*e.g.*, DMV, warrants, missing persons and stolen vehicle databases, etc.), to perform remote records request entry, to do field reporting and to have web access that will enhance public safety by increasing officer efficiency, reducing paperwork and allowing officers to spend more of their time on patrol.

In addition to text-based queries, broadband networks could allow mission-critical information to be exchanged in real-time, anytime, anywhere. Distribution of images (floor plans, mug shots, incident stills), videos (surveillance feeds, on-scene video), messaging, access to incident management databases can provide a common operating picture and access to information from the field, enhancing both incident response and first responder safety. Finally, broadband networks could allow for the secure, easy and interoperable sharing of information (voice, video and multi-media data) among members of a task force.

A very real life example of the need for broadband connectivity occurred in December of 2007. Oregon experienced a severe winter storm that cut every State access road in three



counties between Oregon's urban area and the Pacific coast. Oregon's Department of Transportation ("ODOT") was one of many responders. Because broadband capability was not available, ODOT's front line personnel could not relay information to others, share the extent of the damages or to describe emergency condition issues, advise others of the situation - which roads were open or which were closed, where the need was greatest, or what was happening on a real time basis. The inability to share information isolated coastal residents and those in several other Oregon counties and limited emergency responders from entering the damage-inflicted area. With an interoperable network with broadband capability, ODOT officials could have accessed real-time full-motion video to provide situational information to other first responders. ODOT (while en-route or at the scene) could have immediately supported police, fire, emergency medical and emergency management personnel while those emergency responders were in route to the emergency. Immediate access to the information as to the location of problems greatly speeds up clearing of the problems.

Oregon has developed OWIN, an interoperable wireless network, to serve the primary four state agencies (Transportation, State Police, Forestry and Corrections) and also to be available to federal, tribal and local responders either on an emergency basis or on a subscriber basis. In either case, a statewide broadband data layer as part of OWIN would be an extremely valuable network for Oregon's emergency responders. For its first responders throughout the state, Oregon envisions:

- Police officers knowing quickly and silently that the vehicle they are stopping is stolen and that the individual they are interviewing is wanted or dangerous. Police officers able to conduct photo lineups of suspects while still at the crime scene and able to access web-enabled surveillance cameras in public facilities to gain intelligence critical to the safe resolution of blockaded or hostage incidents.
- Police officers able to directly access data bases such as Department of Motor Vehicles information directly without the intervention of a human. This will greatly speed access and accuracy to critical data.



- Police technologists able to utilize the deployment of mobile license plate reading technology which provides real-time tracking of vehicles while looking for fugitives fleeing from apprehension.
- Public safety responders able to more efficiently deploy to incidents by viewing traffic cameras which accurately depict emergency conditions on roadways rather than solely relying on caller descriptions of location and severity.
- Firefighters knowing which routes are blocked due to construction or accidents, which hydrants are out of service, and what hazardous conditions exist as soon as the data is updated by Police, Water Departments and Building Inspectors;
- Firefighters having access to building diagrams, hazardous material information, special hazard information and building occupancy information to speed decision making on emergency incidents.
- Medics able to stream patients' vital signs and will have access to video of the patient to the Emergency Rooms, where the doctors will be able to better and more quickly diagnose and issue orders for treatment while the ambulance is en-route to the hospital.
- Emergency management personnel able to utilize broadband technology to implement advanced traffic management systems to aid in evacuation of communities and control traffic devices to speed evacuation as well as to clear routes for emergency responders.
- Emergency Managers able to receive real-time data and video from incident sites, teleconference with the Incident Commanders, and quickly share critical information, and mobilize essential resources to ensure the swift and safe resolution of the emergency situation.
- Responders of all types able to integrate the GPS derived locations of their units to the computer aided dispatch (CAD) system where CAD locates the address of the caller. Responding units able to follow a prescribed route which has been electronically cleared of traffic and converging apparatus alerted when approaching intersections.

However, to realize all these benefits and more, Oregon needs a waiver of the current rules and appropriate authorizations to construct and operate a statewide public safety broadband wireless data network now. Later, when the nationwide public safety broadband wireless network is constructed and operable, the Oregon system could be integrated into the nationwide system.<sup>10</sup>

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<sup>10</sup> The State understands that, as a condition of a waiver, it may be required to make certain modifications to the network to conform to yet-to-be determined interoperability standards and procedures.

Oregon is moving expeditiously to implement its statewide public safety networks. Some of the steps taken to date include creating a separate project division and hiring state employees to staff the project; entering into partnerships with federal, local and tribal entities to share and develop sites; hiring a consultant to provide initial project and system designs; conducting drive tests; hiring an architectural and engineering firm to design the sites and the microwave backbone; hiring a construction management/general contractor firm to build out the sites; hiring an independent quality assurance firm; and releasing a request for proposals for a radio contractor to design, install and implement the radio system (the RFP closes August 13, 2010, and the State expects to have a contract in place by March 2011). Construction of the infrastructure that is needed to house the three systems in the OWIN Radio System (statewide trunked radio system, a statewide interoperability system, and a separate moderate speed public safety mobile data system) has already begun. Therefore, Oregon could start installation of a broadband network as early as the second quarter of 2011, and statewide implementation could be completed by the end of 2012, which is the target deadline for the completion of the entire OWIN Project.

Without a waiver, Oregon will be compelled to implement a costly, interim moderate-speed mobile data system that has much less capability and reliability than a broadband system. This would not serve the citizens or the public safety responders of Oregon, and it would not contribute to the Commission's goal of a National Public Safety Broadband Network in the 700 MHz band. If this and similar waiver requests are granted, the Commission also will be sending a strong signal to the communications industry to provide necessary 700 MHz LTE equipment vital for public safety applications.

### **III. THE REQUESTED WAIVER IS IN THE PUBLIC INTEREST AND SHOULD BE GRANTED.**

To obtain a waiver of the Commission's rules, a petitioner must demonstrate either that (1) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest, or (2) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.<sup>11</sup> Under either of these standards, the requested waiver allowing the State of Oregon to deploy a public safety broadband network at this time is justified.

#### **A. Grant of the Waiver Will Enable the State of Oregon to Deploy an Interoperable Broadband System to Serve First Responders, Without Undermining the Commission's Goal of a Nationwide 700 MHz Public Safety Broadband Network.**

The tragic events of September 11, 2001 and Hurricane Katrina made clear that public safety entities need effective interoperable communications capabilities. The reality is that the deployment of a nationwide network from which local public safety entities can obtain broadband services is likely years away. The State of Oregon is willing to commit resources to start to bridge this gap so that its first responders can utilize broadband technology to protect life and property immediately.

In Washington, DC, the National Capital Region ("NCR") public safety broadband network demonstrates that public safety entities can make use of this valuable 700 MHz spectrum today in advance of a there being a national network. In January 2007, the

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<sup>11</sup> 47 C.F.R. § 1.925(b) (3).

Commission granted NCR a conditional waiver to permit broadband operations on 700 MHz wideband interoperability channels and reserve channels not yet available for licensing.<sup>12</sup> The Commission acknowledged the benefits use of the broadband frequencies would give the public safety agencies: efficiency, speed, dedicated, reliable, interoperable networks, coordination, cooperation, and the ability to share critical information at critical times as well as for day-to-day operations. The Commission also acknowledged that granting the waiver also encouraged experimentation and that not waiting for the single nationwide system would allow for a more rapid deployment of broadband. Flexibility in the development of its National Broadband Plan to meet the public's needs and the needs of public safety agencies is also very important to the Commission.

The State of Oregon should be afforded a similar opportunity to use the broadband spectrum. Oregon is in a unique position. Oregon is not starting from scratch. The citizens of Oregon and representatives of federal, tribal, county, regional, and city entities as well as the primary state agencies already agree that a reliable, interoperable network is critical to the public safety needs in Oregon; that belief has wide support across the state. Oregon is already building a statewide interoperable network that includes a statewide 700 MHz digital LMR radio system and a separate moderate speed mobile data component. If the Commission grants this waiver, Oregon will include the installation and implementation of a *broadband* data network based upon LTE technology into OWIN rather than the moderate speed mobile data system already planned. The roll-out can be completed by the end of 2012, so the deployment must be on a relatively fast track.

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<sup>12</sup> Request by National Capital Region for Waiver of the Commission's Rules to Allow Establishment of a 700 MHz Interoperable Broadband Data Network, WT Docket No. 96-86, *Order*, 22 FCC Rcd 1846 (PSHSB 2007).

Oregon's broadband deployment will also provide technical and operational experience for subsequent broadband systems across the nation. Oregon is a very large area, 98,400 plus square miles. Oregon is comprised of diverse terrain including, mountains, canyons, rivers, valleys, deserts, plateaus, buttes, rocky coastlines, long beaches, farmland, and great forests. Granting Oregon this waiver and allowing Oregon to address the challenges of implementing a broadband network across an area of this size and with this terrain will greatly add to the knowledge gained from the other broadband deployments. The State is seeking such authority from the Commission as may be necessary and appropriate to allow deployment of the broadband network described in this waiver.

While the nation's public safety community waits for resolution of the Commission's proceedings, the public interest is benefited if local authorities, like the State of Oregon, that exhibit the evidence that they are ready to implement such a system are allowed to deploy their own interoperable, broadband public safety communications networks. In these unique circumstances, waiver of the rules limiting such deployment to the Upper 700 MHz D Block licensee will serve the public interest.

**B. The Network Will Be Robust and Will Satisfy All of the Technical Specifications Proposed by the Commission in the *Third Further Notice*.**

The State of Oregon believes that the selection of LTE as its technology for use in the public safety 700 MHz band is an entirely appropriate and essential first step to achieving the goal of nationwide interoperability. Oregon is currently planning and has funding available for a P25 700 MHz data component of the OWIN Radio System. If the waiver is granted, Oregon will seek final approval of the Oregon Legislature to reallocate the mobile data portion of the funding to the vastly superior deployment of a LTE network to support public safety operations. This LTE system would be deployed to operate on a paired assignment of 5 MHz wide channels in the

public safety broadband block between 793-798 MHz for mobile transmission and 763-768 MHz for base station transmission. The equipment operating band will be compliant with Band Class 14 as specified in the 3GPP standards. LTE is a commercial open standard technology which will be deployed by commercial wireless operators in the commercial portions of the 700 MHz band in early 2010.

LTE deployed in the Public Safety Broadband Block would meet the technical specifications proposed by the Commission in its *Third Further Notice*, as well as meet the NPSTC recommended requirements identified in the NPSTC Recommendations.<sup>13</sup> In particular:

- Capacity, Throughput, and Quality of Service. With user peak data rates of 31.7 Mbps (downlink) and 9.1 Mbps (uplink) when deployed on 2x5 MHz channels and quality of service support for real-time and non-real-time IP-based applications, LTE will support all the applications listed in Table 1 of proposed Section 27.1305 of the Commission's rules. Networks will be designed with effective cell edge data rates exceeding those listed in Table 2 of proposed Section 27.1305. In addition, the systems will provide QoS mechanisms and priority levels consistent with LTE standards.
- Security and Encryption. LTE is highly secure in view of its use of a variety of robust authorization and authentication mechanisms employing standard encryption techniques for both media and signaling traffic. IPSec is supported. The system will comply with commercial best practices.
- Availability, Robustness, and Hardening. Public Safety LTE networks will be designed for robustness and reliability. Using LTE, public safety networks exceeding 99.6% availability metric excluding radio signal coverage and scheduled maintenance downtime can be deployed. Furthermore, network equipment can be deployed at existing public safety Land Mobile Radio sites, which have been typically hardened to meet the needs of mission-critical public safety communications.

Public safety interests, equipment manufacturers and commercial wireless service providers under the auspices of the NPSTC's Broadband Task Force have worked to develop minimum recommendations for LTE-based systems, to ensure roaming and interoperability

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<sup>13</sup> See NPSTC Recommendations *supra* at 2.

among those entities, such as Oregon, who plan to build ahead of the national network. The State of Oregon supports the NPSTC Broadband Task Force recommendations as they are useful guidelines for achieving roaming and interoperability and will build its planned network to these recommendations.<sup>14</sup>

#### IV. CONCLUSION

The Commission would significantly advance the cause of public safety by allowing the State of Oregon to deploy a public safety broadband network that would transition into a shared wireless Nationwide Public Safety Broadband Network as that network is deployed on a nationwide basis. The State of Oregon stands ready to begin deployment of life-saving broadband services, and respectfully requests that the Commission promptly allow it to begin by granting the waiver as requested herein.

Respectfully submitted,

STATE OF OREGON, acting by and through the following:

Department of Transportation

By: 

Director

Department of Forestry

By: 

Director

Department of State Police

By: 

Superintendent

Department of Corrections

By: 

Director

<sup>14</sup> See *Id.* at 2. In developing its set of technical recommendations, the task force took into account the roaming scenarios that would be encountered by state and local jurisdictions seeking to deploy 700 MHz LTE systems via a waiver, including: roaming between 700 MHz public safety LTE networks, roaming between private 700 MHz public safety LTE and D block shared LTE network, roaming between 700 MHz public safety LTE networks to commercial 700 MHz LTE networks, and roaming between 700 MHz public safety LTE networks to commercial and private broadband networks (3GPP and non-3GPP) in other bands.

The NPSTC Recommendations provide a sound set of requirements and technical implementation guidelines to support interoperability among public safety agencies deploying LTE-based systems via a waiver. The technical implementation guidelines take into account the evolution of LTE technology, as well as public safety users' immediate-term application needs. The report's proposed recommendation for a public safety broadband roaming exchange is a sensible and pragmatic approach to support inter-regional roaming.